

**PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS**

**SPECIAL PROJECTS: MET
MET 2610**

Lecture/Lab Hours: 4

Credit Hours: 2-4

Date Revised: Spring 2017

Catalog Course Description

A projects-based course in which the students and the instructor identify a research design problem to be pursued by the students. This course exposes the students to “real world” situations encountered in industry, and offers the students an opportunity to apply the skills, knowledge, and abilities learned in previous classes. May be repeated, maximum 8 credits.

Prerequisites

ENGT 1010 and MET 1022 and MET 2022 or MET 2310

Co-requisites

None

Textbooks and Other Supplies

Instructor generated handouts

Resources: Library, Internet, Subject Matter Experts, Industrial Partners

Week/Topic Basis

Week	Topic
1	Course Introduction Project Planning & Logistics
2-5	Design Criteria & Considerations
6-11	Production and Assembly
12-13	Inspection (parts & assemblies)
14	Functional Testing & Analysis
15	Presentations & Reports

Engineering Technology General Outcomes (Educational objectives)

- I. Apply basic engineering theories and concepts creatively to analyze and solve technical problems.
- II. Utilize with a high degree of knowledge and skill equipment, instruments, software, and technical reference materials currently used in industry.
- III. Communicate effectively using developed writing, speaking, and graphics skills.
- IV. Assimilate and practice the concepts and principles of working in a team environment.
- V. Obtain employment within the discipline or matriculate to a four year program in engineering or industrial technology.

Engineering Technology Concentration Competencies

NOTE: At the program level all 6 competencies apply to roman numerals I – V of the Engineering Technology General Outcomes (Educational objectives) listed above.

Students will

- A. Apply the knowledge, techniques, skills, and modern tools for the concentration of study to specifically defined engineering technology activities.
- B. Demonstrate the knowledge of mathematics, science, engineering and technology to engineering technology problems using developed practical knowledge.
- C. Conduct and report the results of standard tests and measurements, and conduct, analyze and interpret experiment or project results.
- D. Function effectively as a member of a technical team.
- E. Identify, analyze and solve specifically defined engineering technology-based problems.
- F. Employ written, oral and visual communication in a technical environment.

Course Goals

NOTE: Capital letters after course goals reference goals of the Engineering Technology Program.

The course will

1. Apply basic skills and knowledge of mechanical design. (A,B,C,E,F)
2. Apply basic skills and knowledge of manufacturing. (A,B,C,E,F)
3. Apply basic skills and knowledge of quality control. (A,B,C,E,F)
4. Apply basic skills and knowledge of electrical engineering technologies. (A,B,C,E,F)
5. Apply basic skills and knowledge of computer integrated drafting. (A,B,C,E,F)
6. Work in a multi-disciplinary team to create a product. (A,B,C,E,F)
7. Present results and findings in a professional and formal manner. (C,F)

Expected Student Learning Outcomes

NOTE: Numbers after Expected Student Learning Outcomes reference the course goals listed above.

The student will

- a. Identify, explain, and apply mechanical design concepts to include the following areas of study: statics; strengths of materials; fluid power application; mechanical elements and systems; part print production, and work scheduling. (1, 6, 7)
- b. Identify, explain, and apply manufacturing concepts, such as: process and tooling selection; material acquisition; part programming and production, work handling and scheduling. (2, 6, 7)
- c. Identify, explain, develop, and apply quality control practices as they relate to the following: test plan development; destructive and nondestructive testing procedures; statistical process control (SPC); coordinate measuring techniques and programming; and data collection and analysis. (3, 6, 7)
- d. Identify, explain, and apply electrical and electronic concepts to include the following areas of study: AC and DC circuits, microprocessors, and rotating machinery (e.g. motors, servo drives, and generators) (4, 6, 7)
- e. Identify, explain, and apply computer drafting and design concepts to include the following: three-view orthographic drawings, auxiliary and section views, assembly drawings, fluid power schematics, and electrical diagrams. (5, 6, 7)
- f. Develop information and write technical reports and related documents, such as feasibility studies, progress reports, test plans, control charts, forms, and final inspection analysis documents. (1, 2, 3, 4, 5, 6, & 7)
- g. Present findings formally as a team to an evaluation committee or peer group. (1, 2, 3, 4, 5, 6, 7)

Evaluation

Total evaluation will be based on the following point distribution.

Testing Procedures

Project Production **40 points**

Project Report **35 Points**

Project Presentation **20 points**

Guidelines and requirements for the project will be developed by the instructor and students.

Participation **5 Points**

Laboratory Experiences

N/A

Field Work

N/A

Other Evaluation Methods

N/A

Grading Scale

Final grade for this course will be based on the following alphabetical/numerical scale.

A	93-100
B+	88-92
B	83-87
C+	79-82
C	74-78
D	65-73
F	Below 65

Policies

Attendance Policy

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

Academic Dishonesty

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. [Disability Services](#) (<http://www.pstcc.edu/sswd/>) may be contacted via [Disability Services email](#) or by visiting Alexander 130.

Other Policies

Safety and Equipment Abuse

Repeated safety violations will result in a reduction of final grade, at the instructor's discretion. Flagrant violations which result in equipment damage or personal injury could result in automatic failure of the course